AMENDMENT

Amendments to the Claims

1. (Currently Amended) A method of identifying a head position of a patient undergoing diagnostic imaging, comprising:
obtaining a diagnostic image of a patient's head;
performing an automated image processing operation to determine coordinates of a Talairach anterior commissure (AC) - posterior commissure (PC) reference line within the diagnostic image;
defining a coordinate system of the diagnostic image with reference to the Talairach AC-PC reference line.

2. (Currently Amended) The method of claim 1, further comprising:
prescribing a subsequent scan based on the identified Talairach AC-PC reference line and coordinate system; and
repeating the automated image processing operation to determine current coordinates of the Talairach AC-PC reference for accommodating changes in patient head position since the previous position determination.

3. (original) The method of claim 1, wherein obtaining a diagnostic image comprises obtaining a midsagittal magnetic resonance imaging (MRI) image of the patient's head.

4. (original) The method of claim 3, wherein obtaining a midsagittal MRI image of a patient's head further comprises:
obtaining at least two scout views;
identifying midline features to permit correction of roll and yaw; and
obtaining a midsagittal MRI image based on identified midline features.

5. (original) The method of claim 4, wherein obtaining a midsagittal MRI image of a patient's head when identifying midline features to permit correction of roll and yaw further comprises:
performing at least one rapid scan operatively configured to accentuate venous blood flow in the superior sagittal sinus (SSS) in a plane selected from a group consisting of coronal scan, axial scan and oblique scan of the patient's head;
identifying the SSS in cross-section in the at least one rapid scan;
identifying a line that bisects the brain with the line passing through the SSS cross-section; and
defining an attitude correction selected from a group consisting of roll correction and yaw correction corresponding to the selected plane for subsequent scans based on the identified line that bisects the brain.

6. (Currently Amended) The method of claim 3, wherein performing an automated image processing operation to identify the Talairach anterior commissure (AC) - posterior commissure (PC) reference line further comprises:
performing an automated image processing operation to iteratively search and identify landmarks on a midline sagittal MR image, these landmarks selected from a group consisting of superior sagittal sinus (SSS), corpus callosum, a rostrum of the corpus callosum, an inferior edge splenium of the corpus callosum, mammilary bodies, fornices, and a superior margin of a brainstem;
performing an automated image processing operation to identify the AC and PC relative to the selected landmarks; and
defining the Talairach AC-PC reference line based upon the identified AC and PC.

7. (Currently Amended) The method of claim 1, wherein performing an automated image processing operation to identify the Talairach anterior commissure (AC) - posterior commissure (PC) reference line further comprises:
acquiring roll and yaw corrected sagittal image section;
referencing a template dataset with a known Talairach AC-PC reference line; and
iteratively minimizing a difference between the sagittal brain image of the patient and the template dataset.

8. (original) The method of claim 7, wherein referencing a template dataset further comprises obtaining a previous scan of the same patient with a known Talairach AC-PC reference line.

9. (original) The method of claim 6, wherein referencing a template dataset further comprises obtaining an institutional standard dataset of an averaged template with a known Talairach AC-PC reference line.

10. (original) The method of claim 6, wherein acquiring roll and yaw corrected sagittal image section further comprises selecting a two-dimensional sagittal image section from a three-dimensional image.

11. (Currently Amended) The method of claim 3, wherein performing an automated image processing operation to identify or approximate the Talairach anterior commissure (AC) - posterior commissure (PC) reference line further comprises:
identifying a line passing through a hard palate on the midline sagittal head MRI image; and
approximating the Talairach AC-PC reference line as about 12 degrees more extended than the hard palate.

12. (original) The method of claim 1, wherein obtaining a diagnostic image comprises obtaining a lateral computerized tomotography (CT) scout image.

13. (original) The method of claim 12, wherein obtaining a lateral CT scout image of a patient's head further comprises physically adjusting patient's head position relative to a scanner that obtains the lateral CT scout image for minimizing roll and yaw visually.

14. (Currently Amended) The method of claim 12, wherein performing an automated image processing operation to identify or approximate the Talairach anterior commissure (AC) - posterior commissure (PC) reference line further comprises:
obtaining a midline sagittal head lateral MR scan previously taken for the patient;
identifying a line passing through a hard palate on the midline sagittal head MR scan;
calculating an angle between the patient's hard palate and an identified Talairach AC-PC reference line in the MR scan;
identifying a line passing through a hard palate on midline sagittal head lateral CT scout scan; and
utilizing this calculated angle to adjust a CT pitch prescription.

15. (original) A medical device for performing diagnostic imaging of a patient's head, the medical device comprising:
a scanner operably configured to obtain a diagnostic image of a patient's head positioned therein;
an image processor operably configured to determine coordinates of a Talairach anterior commissure (AC) - posterior commissure (PC) reference line within the diagnostic image and to define a coordinate system of the diagnostic image with reference to the Talairach AC-PC reference line.

16. (original) The medical device of claim 15, wherein the image processor is further operably configured to prescribe a subsequent scan based on the identified Talairach AC-PC reference line and coordinate system, and to repeat a determination of current coordinates of the Talairach AC-PC reference for accommodating changes in patient head position since the previous position determination.

17. (original) The medical device of claim 15, wherein the scanner comprises a selected one of a group consisting of a computerized tomotography (CT) machine operably configured to a diagnostic image of a lateral CT scout image and a magnetic resonance imaging (MRI) machine operably configured to obtain the diagnostic image comprising a midsagittal magnetic resonance imaging (MRI) image of the patient's head.

18. (original) A program product, comprising: (a) a program configured to receive a diagnostic image of a patient's brain and to determine coordinates of a Talairach anterior commissure (AC) - posterior commissure (PC) reference line within the diagnostic image and to define a coordinate system of the diagnostic image with reference to the Talairach AC-PC reference line; and (b) a signal bearing media bearing the program.

19. (original) The program product of claim 18, wherein the signal bearing media comprises at least one of a recordable media and a transmission-type media.

20. (original) The program product of claim 18, wherein the program is further configured to receive the diagnostic image comprising one from a group consisting of a lateral CT scout image and midsagittal magnetic resonance imaging (MRI) image.